

CLAIM AMENDMENTS

Please amend the claims as follows:

1. (Currently Amended) A method of processing digital communication signals in a system including a processor and a plurality of buffers, the method comprising:

buffering first digital samples corresponding to a first group of symbols into a first buffer and a second buffer, wherein buffered first digital samples corresponding to earlier paths of the first group of symbols are stored in the first buffer, and buffered first digital samples corresponding to later paths of the first group of symbols are stored in the second buffer;

processing, by the processor, the first digital samples in the first buffer and the second buffer for from all known paths of [[a]] the first group of symbols during a first symbol group duration, wherein buffered digital samples corresponding to the first group of symbols start in a first buffer and end in a second buffer, and receiving samples at a third buffer if the first group of symbols is being processed ;

disabling the processor upon completion of processing the first digital samples through a remainder of the first symbol group duration;

simultaneously with processing the first digital samples, buffering second digital samples corresponding to a second group of symbols into the second buffer and a third buffer, wherein buffered second digital samples corresponding to earlier paths of the second group of symbols are stored in the second buffer, and buffered second digital samples corresponding to later paths of the second group of symbols are stored in the third buffer;

processing, by the processor, the second digital samples in the second buffer and the third buffer for from all known paths of [[a]] the second group of symbols during a second symbol group duration, wherein buffered digital samples corresponding to the second group of symbols start in the second buffer and end in the third buffer, and receiving samples at the first buffer if the second group of symbols is being processed; and

disabling the processor upon completion of processing the second digital samples through a remainder of the second symbol group duration;

simultaneously with processing the second digital samples, buffering third digital samples corresponding to a third group of symbols into the third buffer and the first buffer, wherein buffered third digital samples corresponding to earlier paths of the third group of symbols are stored in the third buffer, and buffered third digital samples corresponding to later paths of the third group of symbols are stored in the first buffer;

processing the third digital samples in the third buffer and the first buffer for ~~from~~ all known paths of [[a]] the third group of symbols during a third symbol group duration; wherein buffered digital samples corresponding to the third group of symbols start in the third buffer and end in the first buffer, and receiving samples at the second buffer if the third group of symbols is being processed; and

disabling the processor upon completion of processing the third digital samples through a remainder of the third symbol group duration.

2. (Original) The method of claim 1, wherein the plurality of buffers hold a number of digital samples, the number being adjusted for communication conditions.
3. (Previously Presented) The method of claim 2, wherein the communication conditions include a communication technology and anticipated maximum useful multi-path delay in an environment.
4. (Original) The method of claim 1, wherein received information relevant to a given group of transmitted symbols is processed in one iteration, without a need to store intermediate results for the given group of transmitted symbols.
5. (Cancelled)
6. (Original) The method of claim 1, further comprising tuning a receiver to a first channel, storing received symbols from the first channel, and tuning the receiver to a second channel.
7. (Currently Amended) The method of claim 6, further comprising processing symbols received from the first channel during extra cycles of processing while the receiver is tuned to the second channel eyele.

8. (Original) The method of claim 1, wherein the first, second, and third paths have different sampling rates.

9. (Currently Amended) A method of processing digital communication signals in a system including a plurality of buffers, the method comprising:

processing, by a processor during a first symbol group duration, symbols corresponding to a first group of symbols to be processed and from all known paths, wherein the first group of symbols in a first path start in a first buffer and end in a second buffer, and receiving samples at a third buffer [[if]] while the first group of symbols is being processed;
disabling the processor upon completion of processing the symbols corresponding to the first group through a remainder of the first symbol group duration;

processing, by the processor during a second symbol group duration, symbols corresponding to a second group of symbols to be processed and from all known paths, wherein the second group of symbols in a second path start in the second buffer and end in the third buffer, and receiving samples at the first buffer [[if]] while the second group of symbols is being processed;

disabling the processor upon completion of processing the symbols corresponding to the second group through a remainder of the second symbol group duration;

processing, by the processor during a third symbol group duration, symbols corresponding to a third group of symbols to be processed and from all known paths, wherein the third group of symbols in a third path start in the third buffer and end in the first buffer, and receiving samples at the second buffer [[if]] while the third group of symbols is being processed;

disabling the processor upon completion of processing the symbols corresponding to the third group through a remainder of the third symbol group duration; and

adapting duration time of the processing of the first, second, and third groups based on channel and signal conditions.

10. (Currently Amended) An apparatus to process digital communication signals, the apparatus comprising:

- a plurality of buffers;
- a processing unit; and

programmed memory having instructions directing the processing unit to process first digital samples corresponding to a group of symbols to be processed in a plurality of buffers, the first digital samples starting in a first buffer of the plurality of buffers and ending in a second buffer of the plurality of buffers;

wherein the processing unit processes the first digital samples during a first symbol group duration, and wherein additional ~~[[the]]~~ digital samples are received at a third buffer of the plurality of buffers ~~[[if]]~~ while the first digital samples ~~[[is]]~~ are being processed, and wherein the processing unit is disabled upon completion of processing the first digital samples through a remainder of the first symbol group duration.

11. (Previously Presented) The apparatus of claim 10, further comprising input and output busses operable to permit random access to the plurality of buffers during processing.

12. (Original) The apparatus of claim 10, wherein symbols are processed in a different group of buffers after a process iteration is complete.

13. (Currently Amended) A method of processing digital communication signals, the method comprising:

receiving a communication signal at a receiver;

communicating digital samples from the received communication signal to sample buffers, wherein the digital samples include symbols; ~~and~~

processing, by a processor during a first symbol group duration, the symbols in a first group of sample buffers and receiving digital samples from the receiver at a second group of sample buffers ~~only~~ during the processing;

disabling the processor upon completion of processing the symbols in the first group of sample buffers through a remainder of the symbol group duration; and

enabling the processor to process the symbols in the second group of sample buffers during a second symbol group duration.

14. (Original) The method of claim 13, further comprising, after symbols in a symbol path are completely processed, designating sample buffers in the first group of sample buffers as being in the second group of sample buffers; and designating sample buffers in the second group of sample buffers as being in the first group of sample buffers, whereby sample buffers are rotated between processing iterations and digital sample receiving operations.

15. (Original) The method of claim 14, wherein sample buffers in the first group of sample buffers designated as being in the second group of sample buffers include all the sample buffers in the first group of sample buffers except a sample buffer having an end of a symbol path.

16. (Cancelled)

17. (Currently Amended) A method of processing digital communication signals in a system including a processor and a plurality of buffers, the method comprising:

processing, by the processor during a first symbol group duration, symbols corresponding to a first group of symbols to be processed and starting in a first buffer and ending in a second buffer, and receiving samples at a third buffer ~~only~~ during the processing of the first group of symbols;

disabling the processor upon completion of processing the symbols corresponding to the first group during a remainder of the first symbol group duration;

processing, by the processor during a second symbol group duration, symbols corresponding to a second group of symbols to be processed and starting in the second buffer and ending in the third buffer, and receiving samples at the first buffer ~~[[if]]~~ while the second group of symbols is being processed; ~~and~~

disabling the processor upon completion of processing the symbols corresponding to the second group during a remainder of the second symbol group duration;

processing, by the processor during a third symbol group duration, symbols corresponding to a third group of symbols to be processed and starting in the third buffer and ending in the first buffer, and receiving samples at the second buffer ~~[[if]]~~ while the third group of symbols is being processed; and

disabling the processor upon completion of processing the symbols corresponding to the third group during a remainder of the third symbol group duration.

18. (Currently Amended) A method of processing digital communication signals in a system including a processor and a plurality of buffers, the method comprising:

processing, by the processor during a first symbol group duration, from all known paths of a first group of symbols, wherein buffered digital samples corresponding to the first group of symbols start in a first buffer and end in a third buffer, and receiving samples at a fourth buffer and a fifth buffer [[if]] while the first group of symbols is being processed;

disabling the processor upon completion of processing the first group of symbols during a remainder of the first symbol group duration;

processing, by the processor during a second symbol group duration, from all known paths of a second group of symbols, wherein buffered digital samples corresponding to the second group of symbols start in the third buffer and end in the fifth buffer, and receiving samples at the first buffer and second buffer [[if]] while the second group of symbols is being processed;

disabling the processor upon completion of processing the second group of symbols during a remainder of the second symbol group duration;

processing, by the processor during a third symbol group duration, from all known paths of a third group of symbols, wherein buffered digital samples corresponding to the third group of symbols start in the fifth buffer and end in the first buffer, and receiving samples at the fourth buffer and the third buffer [[if]] while the third group of symbols is being processed;

disabling the processor upon completion of processing the third group of symbols during a remainder of the third symbol group duration;

processing, by the processor during a fourth symbol group duration, from all known paths of a fourth group of symbols, wherein buffered digital samples corresponding to the fourth group of symbols start in the first buffer and end in the third buffer, and receiving samples at a second buffer and the fifth buffer [[if]] while the fourth group of symbols is being processed;

disabling the processor upon completion of processing the fourth group of symbols during a remainder of the fourth symbol group duration;

processing, by the processor during a fifth symbol group duration, from all known paths of a fifth group of symbols, wherein buffered digital samples corresponding to the fifth

group of symbols start in the third buffer and end in the fifth buffer, and receiving samples at the fourth buffer and the first buffer [[if]] while the fifth group of symbols is being processed;
and

disabling the processor upon completion of processing the fifth group of symbols during a remainder of the fifth symbol group duration;

processing, by the processor during a sixth symbol group duration, from all known paths of a sixth group of symbols, wherein buffered digital samples corresponding to the sixth group of symbols start in the fifth buffer and end in the first buffer, and receiving samples at the second buffer and the first buffer [[if]] while the sixth group of symbols is being processed; and

disabling the processor upon completion of processing the sixth group of symbols during a remainder of the sixth symbol group duration.

19. (Original) The method of claim 18, wherein each of the plurality of buffers holds a different number of digital samples based on communication conditions.

20. (Original) The method of claim 19, wherein the communication conditions include multi-path delays and waveform features.

21. (Original) The method of claim 18, wherein the paths are from a plurality of base stations.

22. (Currently Amended) An apparatus to process digital communication signals, the apparatus comprising:

- a plurality of buffers;
- a processing unit; and

programmed memory having instructions directing the processing unit to process first digital samples corresponding to a group of symbols to be processed in a plurality of buffers, the first digital samples starting in a first buffer of the plurality of buffers and ending in a second buffer of the plurality of buffers;

wherein the processing unit processes the first digital samples during a first symbol group duration, and wherein additional [[the]] digital samples are received at a third buffer of the plurality of buffers [[if]] while the first digital samples [[is]] are being processed, and wherein the processing unit is operable to select digital samples or an intermediate result from a buffer coupled to the processing unit, and

wherein the processing unit is disabled upon completion of processing the first digital samples through a remainder of the first symbol group duration.